

Appln. No.: 10/798,979  
Amendment Dated July 18, 2007  
Reply to Office Action of April 19, 2007

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**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) An active pixel sensor array sampling system, comprising:  
at least one video circuit that generates a video voltage from each one of a group of pixels; and  
at least one reset circuit that generates a reset voltage associated with each one of the pixels in the group of pixels, wherein one or more of the video or reset circuits include  
(1) an amplifier having an input and an output;  
(2) a column input having one of the video or reset voltage thereon; and  
(3) a capacitor such that in a first mode the capacitor is coupled between the column input and the input of the amplifier and in a second mode the capacitor is coupled between the input of the amplifier and the output of the amplifier;  
~~wherein one of the at least one video circuit and at least one reset circuit comprises a closed loop sample and hold circuit.~~
2. (Currently Amended) The system of claim 1 wherein the amplifier includes closed loop sample and hold circuit comprises a single ended common source amplifier.
3. (Currently Amended) The system of claim 1 wherein the ~~closed loop sample and hold circuit comprises a capacitor for holding~~holds the one of the video voltages and the or reset voltages voltage.
4. (Currently Amended) The system of claim 3 wherein the ~~sample and hold circuit includes an amplifier having an input and an output and the one or more of the video and reset circuits further include switches that place its the capacitor across its the input and the output of the amplifier.~~
5. (Original) The system of claim 1 wherein the pixels are arranged in columns and rows, the at least one video circuit comprises a plurality of video amplifiers, each video amplifier being associated with a respective column of pixels, and wherein the at least one reset circuit comprises a plurality of reset amplifiers, each reset amplifier being associated with one of the video amplifiers.

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6. (Currently Amended) An active pixel sensor array sampling system comprising:  
a video circuit that generates a video voltage from each one of a group of pixels; and  
a reset circuit associated with the video circuit that generates a reset voltage associated with each one of the pixels in the group of pixels;

wherein the video and reset circuits each include (1) an amplifier having an input and an output, (2) a column input having one of the video or reset voltage thereon, and (3) a capacitor selectively coupled between: (i) the column input and the input of the amplifier and (ii) the input of the amplifier and the output of the amplifier ~~the video and reset circuit each comprise a closed-loop sample-and-hold circuit.~~

7. (Currently Amended) The system of claim 6 wherein the amplifier closed-loop sample-and-hold circuit ~~of each of the video circuit and reset circuits~~ comprises a single ended common source amplifier.

8. (Currently Amended) The system of claim 6 wherein the video and reset closed-loop sample-and-hold circuits each comprise a capacitor for holding of the video and reset circuits hold the video voltage and the reset voltage, respectively.

9. (Currently Amended) The system of claim 6 wherein each of the sample-and-hold circuits includes an amplifier having an input and an output ~~the video and reset circuits includes~~ include

a plurality of switches that such that the plurality of switches are configured to place its a respective capacitor across its the input and the output of the associated amplifier.

10. (Original) The system of claim 6 wherein the pixels are arranged in columns and rows and wherein the group of pixels is a column of pixels.

11. (Currently Amended) A video amplifier for use in sampling an active pixel sensor array, the video amplifier comprising ~~a closed-loop sample-and-hold circuit;~~

a video circuit having

(1) an amplifier with an input and an output,

(2) a column input having a video voltage thereon, and

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(3) a capacitor such that (i) in a first mode the capacitor is coupled between the column input and the input of the amplifier and (ii) in a second mode the capacitor is coupled between the input of the amplifier and the output of the amplifier.

12. (Currently Amended) The video amplifier of claim 11 wherein the video circuit includes a closed loop sample and hold circuit comprising the amplifier being of the video circuit a single ended common source amplifier.

13. (Canceled)

14. (Currently Amended) The video amplifier of claim ~~13~~12 wherein the sample and hold circuit includes an amplifier having an input and an output and a plurality of switches configured to that place the capacitor across the input and output of the amplifier of the video circuit.

15. (Currently Amended) An integrated circuit including a video amplifier for use in sampling an active pixel sensor array, the video amplifier comprising ~~a closed loop sample and hold circuit;~~

a video and reset circuit having

(1) an amplifier with an input and an output

(2) a column input having a video voltage thereon, and

(3) a capacitor for holding the video voltage such that the capacitor is selectively switched between (i) the column input and the input of the amplifier and (ii) the input of the amplifier and the output of the amplifier to transfer the video voltage.

16. (Currently Amended) The integrated circuit of claim 15, wherein the ~~closed loop sample and hold circuit amplifier of the video and reset circuit~~ comprises a single ended common source amplifier.

17. (Canceled)

18. (Currently Amended) The integrated circuit of claim ~~15, 17~~ wherein the ~~closed loop sample and hold circuit~~ further video and reset circuit includes an amplifier having an input and an output and a plurality of switches configured to that place the capacitor either across the input and output of the amplifier of the video and reset circuit in a first mode or to place the capacitor across the column input and the input of the amplifier of the video and reset circuit in a second mode.

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19. (Original) The integrated circuit of claim 15 wherein the integrated circuit is a CMOS integrated circuit.

20. (New) The video amplifier of claim 11, wherein the video circuit includes a video sample and hold circuit and the video sample and hold circuit includes a single capacitor.

21. (New) The video amplifier of claim 11, further comprising:

a reset circuit having

(1) a further amplifier with a further input and a further output; and

(2) a further capacitor for holding a reset voltage thereon, the further capacitor being coupled between the column input and the input of the amplifier when the capacitor of the video circuit is in the second mode and being coupled between the input and output of the further amplifier when the capacitor of the video circuit is in the first mode.